ABSTRACT BOOK

27TH INTERNATIONAL CONGRESS FOR CONSERVATION BIOLOGY

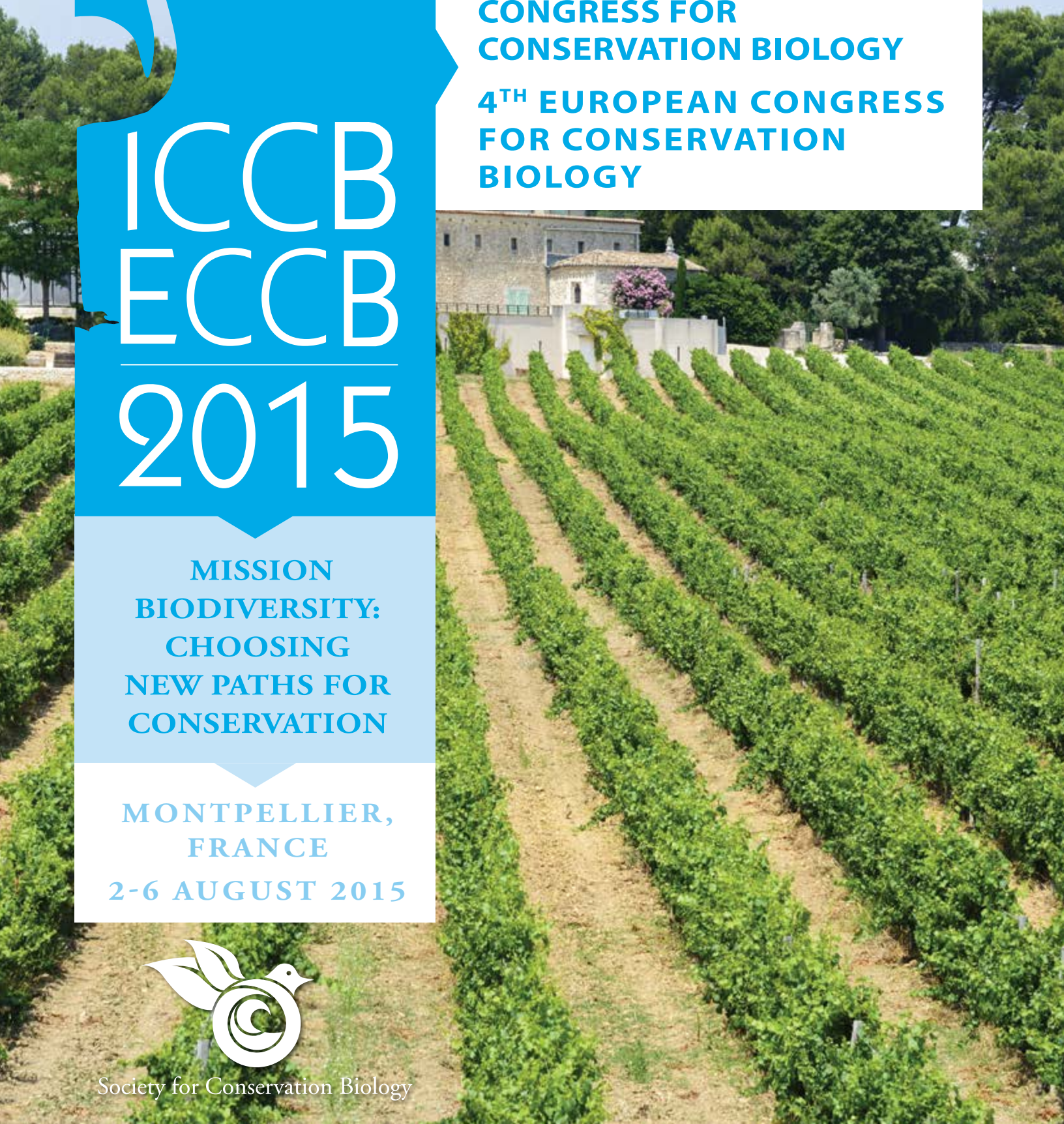
4TH EUROPEAN CONGRESS FOR CONSERVATION BIOLOGY

ICCB ECCB 2015

MISSION BIODIVERSITY: CHOOSING NEW PATHS FOR CONSERVATION

MONTPELLIER, FRANCE

2-6 AUGUST 2015



Society for Conservation Biology

ICCB ECCB 2015

ABSTRACT BOOK

The Society for Conservation Biology (SCB), a global society of conservation students and professionals, held in August 2015 in Montpellier, France its 27th International Congress for Conservation Biology, jointly hosted with the 4th European Congress for Conservation Biology. SCB celebrated its 30th birthday with its largest conference ever, comprised of 2063 attendees, 782 poster presentations and 943 oral presentations organized in 74 contributed sessions and 73 symposia sessions.

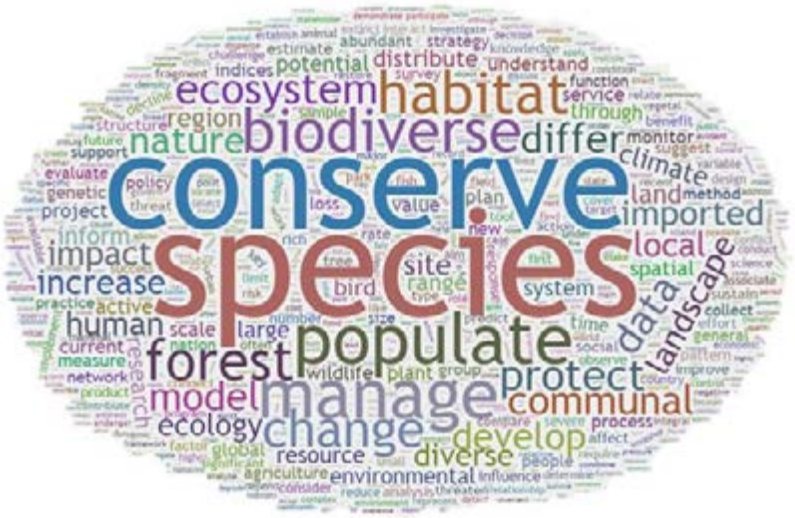
The theme of the conference "Mission Biodiversity: Choosing new paths for conservation" represented a response to the fact that the traditional methods for conserving biodiversity need to adapt and change to match the ever-changing nature and needs of today's world. It emphasized that the same rapid and ongoing biophysical and societal changes our world is facing also affect conservation science and practice.

We are asking very different questions than what we asked years ago, and using different methods to get the data we need to answer these questions. Increasingly, we work with people from different disciplines such as political science, computer science, economics, and social science, among others. We investigate different challenges that range from new pathogens and invasive species to new drivers of habitat loss such as oil palm production in West Africa to tangled socio-political issues such as the growing illegal trade of species and their parts on the internet. We are developing new methods and tools to address these challenges with on-the-ground conservation, such as using drones and new remote-sensing technology for monitoring and conservation enforcement or citizen science projects for collecting data and engaging the public. Unsurprisingly, one of the most common words in abstracts presented at ICCB-ECCB abstracts was "change." The ICCB-ECCB 2015 theme and its scientific content, summarized in this Abstract Book, document these changes and our need to keep up with, and even anticipate them for better conservation science and practice.

ICCB-ECCB 2015 featured several presentations, workshops and training courses that provided solutions to prevent or mitigate anthropogenic threats, and celebrated several exemplary success stories through the mini-plenaries from the Society's Distinguished Service and Early Career Conservationist awardees. ICCB-ECCB 2015 also featured an open debate starring Peter Kareiva and Clive Spash on Conservation Biology today; and how its fundamental principles and values are changing over time.

We would like to thank all participants, organizers and sponsors of ICCB-ECCB 2015 for their excellent work at the conference, and we look forward to many more conservation success stories in the coming years.

—Piero Visconti, Marit Wilkerson, Edward Game and Raphael Mathevet



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For any queries on regards to this book of abstracts please contact Nathan Spillman nspillman@conbio.org

Society for Conservation Biology

ABOUT THE SOCIETY FOR CONSERVATION BIOLOGY

SCB is a global community of conservation professionals with members working in more than 100 countries who are dedicated to advancing the science and practice of conserving Earth's biological diversity. The Society's membership comprises a wide range of people interested in the conservation and study of biological diversity: resource managers, educators, government and private conservation workers, and students.

SCB publishes the flagship peer-reviewed journal of the field, *Conservation Biology,* and the cutting-edge online journal, *Conservation Letters.* The Society provides many benefits to its community, including local, regional, and global networking, an active conservation-policy program, and free online access to publications for members in developing countries. SCB also administers a postdoctoral program, the David H. Smith Conservation Research Fellowship Program, sponsored by the Cedar Tree Foundation.

contribution of wild pollinators is to crop production, what proportion of the total species pool is making significant contributions to crop pollination, how this varies in space and time, how common these species are in the wider countryside and how easily they can be enhanced. We examined these issues using existing datasets of bee pollinators from five continents. Wild bee communities contribute on average over $3000 per ha to the production of insect-pollinated crops. However, a limited subset of all known bee species provides the majority of pollination services because, across crops, years and biogeographical regions, crop-visiting bee communities are dominated by a small number of common species and rarely contain regionally threatened species. These species are dominant crop pollinators because they are able to exist in agricultural landscapes and many are enhanced relatively easily by simple conservation measures. Focusing conservation on the services delivered by pollinators may therefore lead to management strategies that predominantly benefit the limited set of species currently providing the majority of crop pollination. Consequently, conservation of the biological diversity of bees should be motivated not only by immediate benefits from ecosystem services, but by the full richness of arguments for conservation.

A NEW TOOL TO CALCULATE ROADLESS SPACE IN FOREST LANDSCAPES, APPLIED IN THE CONGO BASIN

Fritz Kleinschroth
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New global strategies for road building require innovative tools to analyze linear patterns and their spatial distribution and to evaluate their environmental impacts. Roads not only present physical barriers to wildlife but also provide access for human and biological invasions. In tropical regions especially, forest degradation has been associated with roads built for selective logging into formerly intact forest landscapes. To quantify to what extent ecosystems are influenced by roads, it is important not only to know road length density but also their location in a landscape unit. The concept of roadless space is based on distance to the nearest road from any point. We present the computation of this distribution using the Empty-Space-Function, a general statistical mathematical tool based on stochastic geometry and random sets theory. We demonstrate the applicability of this well-defined probability function to calculate roadless space based on vector road data. In a Congo Basin case study we compared the temporal development of road networks inside different logging concessions over time. We hypothesized that roadless space decreases, even when the rate of wood volume harvest remains constant. Based on LANDSAT time series covering the last 29 years, we assessed accessible roads in relation with the river network and calculated the roadless space at different points in time. As expected, roadless space decreased continuously throughout most concessions, despite a drop in total annual harvest volume after 2008 and independent of forest certification schemes. We recommend that measures to reduce impacts of selective logging should not only be based on the extraction of timber, but should also include the total area impacted by roads. The Empty-Space-Function provides a rigorous mathematical description and a straightforward way to assess intact forest landscapes and is therefore highly applicable to road impact evaluation in conservation science.

218 NATURA 2000 IN GERMANY

Frank Klingenstein
German Federal Ministry for the Environment

The EU habitats and birds directives are the basis for protecting biodiversity in the European Union by mainly three instruments: Establishing protected areas (= the Natura 2000 network) with obligations to protect and actively manage these sites perform impact assessments and compensate possible negative influence of plans and projects on these sites protect species in and outside these areas. For the selection and designation of the Natura 2000 sites only scientific criteria should have been used. Economic or social interest e.g. of land users should be integrated when the conservation measures are defined (e.g. management plans). In Germany, there are at about 5.300 Natura 2000 sites covering 15.4 % of the terrestrial surface and at about 45% of the sea. The designation of these sites in Germany has been a long and difficult process leading to the conviction of Germany by the European Court of Justice. In this process, scientific date gathered mainly by the civil society had a significant impact: The so called Important Bird Ares became a strong argument for site designation and lead to legal uncertainties and a lack of planning reliability endangering economic activities. After the establishment of the German Natura 2000 network the rules and procedures of the EU habitats and birds directives become more and more part of the everyday business of administrations and companies. The contribution will focus on the role of scientific data in the German Natura 2000 process and will try to explain why any changes in the directives may have serious impacts on the legal certainly and the achievements of the directives that have already been reached.